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4. Packaging Philosophy

a. It is proposed that the receiving equipment be packaged in accordance with the modular concepts originally enunciated in MIL-E-19600 (AER), as recently modified in WADC exhibits WCLN58-18 and WCLN58-12. The proposed design approach will employ plug-in modular units with standardized dimensions. These units will be mounted on a chassis which will provide the necessary electrical interconnections, air-cooling distribution, interference filtering, and mounting mechanism to the air-frame rack. Each module will be of such design as not to require critical electrical or mechanical interconnection to the main chassis or to the modules. Such a feature provides for easy redesign of the over-all grouping of modules into units with other form factors where installation requirements change.

b. It is proposed that all modules, with the exception of the r-f amplifier module, be housed within a common enclosure containing the main chassis. As in the present Band 1 application, it is believed that the r-f amplifier is better located externally as it figures prominently in the isolation required in the switching operation. Although it is somewhat premature to specify the exact number of modules required, the minimum breakdown will be: 1) the broadband r-f preamplifier, 2) each sub-band converter unit, 3) each fine-tuning receiving/detection unit, 4) power supply (one for each primary supply voltage).

c. It may be desirable to resolve the fine-tuning receiving/detection unit into three separate modules: one module for the r-f and i-f circuitry, another module for the coherent detection circuitry, and the third module for the sweep and lock-on logic. In any event, corresponding modules in the fine-tuning receiving/detection units would be identical.

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d. All sub-band converter units would be completely interchangeable, electrically and mechanically, so that a receiver configuration to handle any type of frequency coverage could be readily established by simply removing one module and inserting another.

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